

LESSON 7

Big Grid Challenge: Conquering the 4x4

30 minutes

Exploring Patterns

WHAT THIS LESSON DOES

This step-by-step lesson guides students through navigating a character on a grid. The lesson begins with a review of a 3x3 grid, then introduces a larger 4x4 grid. Students will practice moving a character to different colors, letters, and animals on the grid, and complete a worksheet activity to reinforce their understanding.

WHAT STUDENTS SHOULD BE ABLE TO DO

- Develop critical thinking and problem-solving skills through grid navigation activities.
- Enhance understanding of directions and spatial awareness by moving a character on a grid.
- Improve command recognition and response through the 'Robot Statues' game.
- Apply knowledge of 3x3 grids to navigate a more complex 4x4 grid.
- Collaboratively solve problems and confirm understanding through interactive whiteboard activities.

BEFORE THE LESSON

- Open and test the 4x4 grid interactive on the whiteboard, and pick which theme (colours, letters or animals) suits your class.
- Print one 4x4 frog-and-fruit worksheet per pupil from the worksheet step.
- Clear a little floor space for Robot Statues so pupils can jump, spin and step safely.
- Decide your two or three Robot Statues commands in advance so the game starts cleanly.

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HOW THE LESSON RUNS

Introduction to Grid Navigation

Robot Statues

3x3 Grid Review

Introducing 4x4 grids

4x4 Grid Colours

4x4 Grid Letters

4x4 Grid Animals

4x4 Worksheet Activity

TEACHING MOVES

- 2. Robot Statues. Agree just two or three commands before starting and demonstrate each once. Keep the leader facing away so the class must follow the signal exactly, not copy the leader.
- 3. 3x3 Grid Review. Ask pupils to name the four arrows out loud and point in each direction. Get one confident answer for a simple 3x3 move before moving up in size.
- 4. Introducing 4x4 grids. Point out the grid is now four across and four down. Do several whole-class attempts on the board, thinking aloud, before you hand the arrows to individual pupils.
- 5. 4x4 Grid Colours. Ask pupils to say the sequence aloud before you tap it in, so they plan the whole route rather than one step at a time.
- 8. 4x4 Worksheet Activity. Model one route on the board first, writing the arrows as you go. Tell pupils to walk a finger along the grid square by square as they write each arrow.

WHAT TO WATCH FOR

- Pupils count the number of squares rather than the number of moves, so they add one arrow too many. Show that moving from one square to the next is one arrow. Have them tap each move, not each square, and count the taps.
- Pupils confuse left and right, or up and down, when the frog changes position on the larger grid. Have them point their own hand in the direction before choosing the arrow, and check by tracing the route with a finger.

DIFFERENTIATION

- Emerging: Let them trace the route with a finger on the whiteboard grid first, then say one arrow at a time before writing anything.
- Developing: Pair them to plan a route together and take turns saying the next arrow aloud before writing it.
- Proficient: Ask them to find a second, longer route to the same fruit, or to write a route and have a partner follow it to check.